

LOCAL NEWS

# San Gabriel

V A L L E Y

Los Angeles Times

THURSDAY, MARCH 2, 1995 • SECTION J



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Eastland Shopping Center in West Covina may take on a new image. Page 8

## News

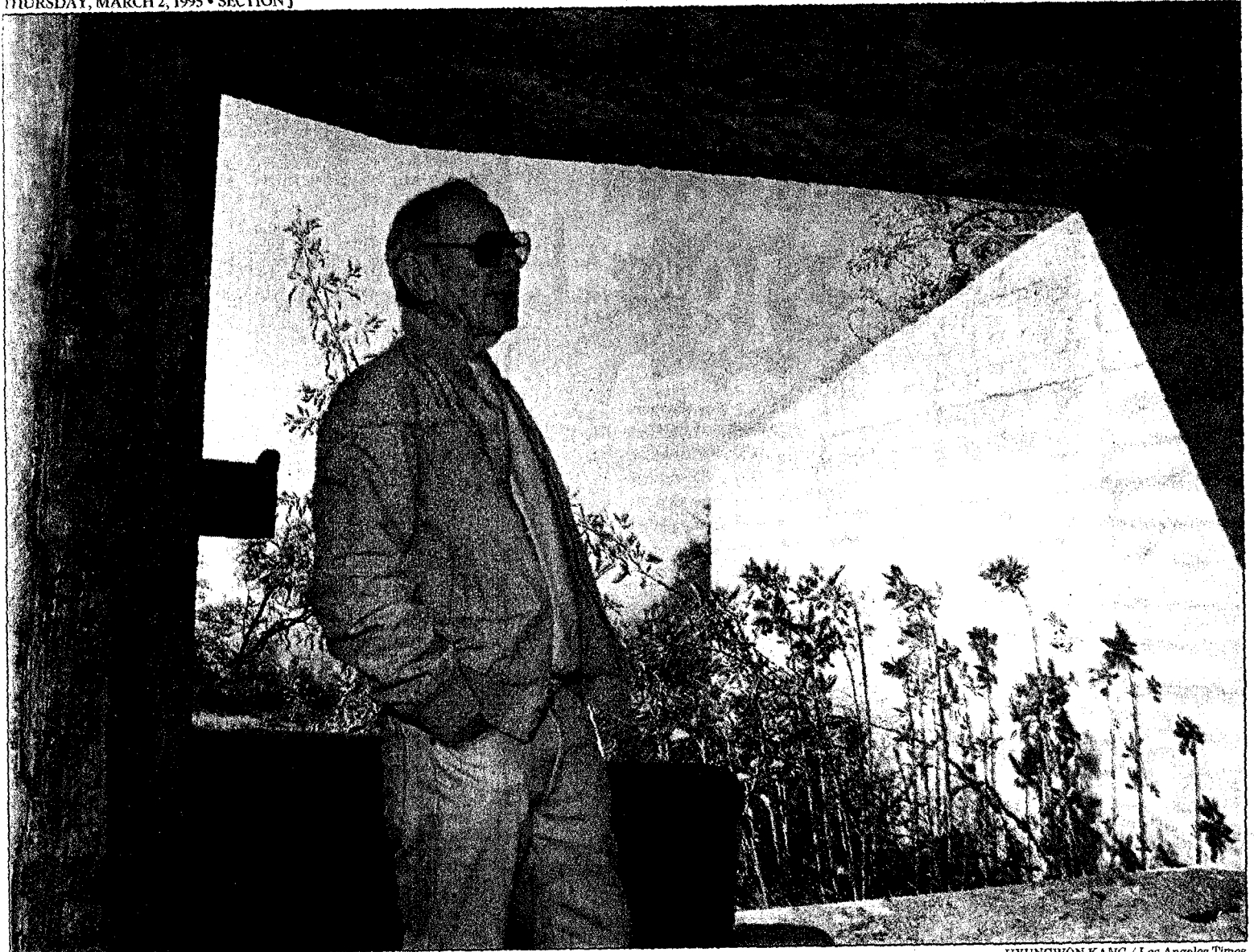
Card club issue dominates Pomona City Council and mayoral races. Page 3

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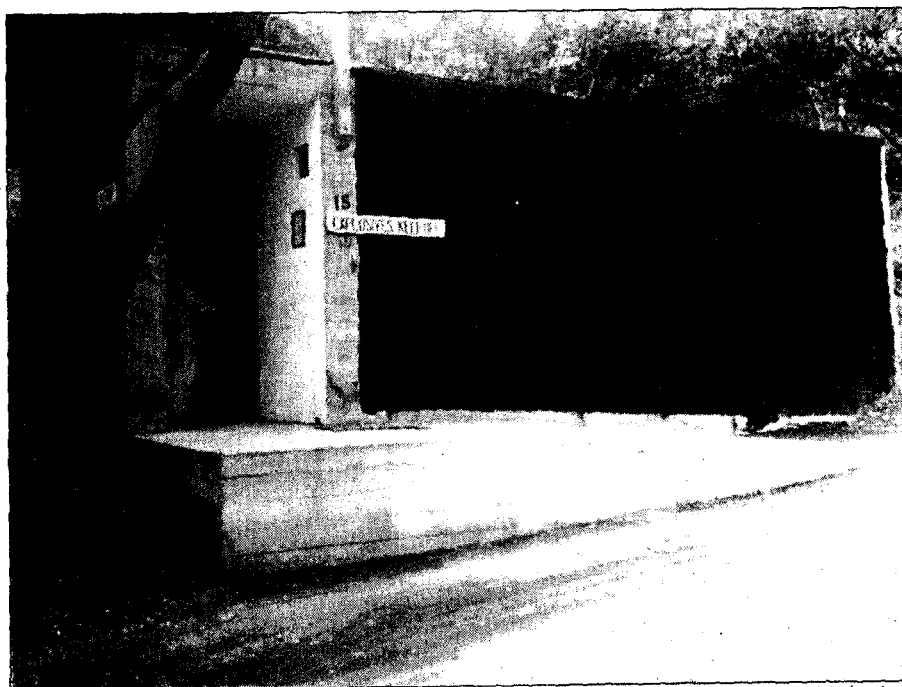


HYUNGWON KANG / Los Angeles Times

## Blast From the Past

During World War II, Caltech stored tons of rocket fuel in bunkers above Pasadena. Now curiosity is stirring about the weapons project, in part because the enclosures were exposed by the 1993 wildfires. Page 12

1943



Caltech Archives

Rocket powder grain was stored in this bunker as part of Caltech's secret Eaton Canyon Project.

1995



HYUNGWON KANG / Los Angeles Times

Kenton Mac David, 72, who worked as a technician on the project, walks down a trail near one of

the five remaining storage bunkers in Eaton Canyon. They were uncovered by fires in 1993.



One of the five storage bunkers still standing in Eaton Canyon, above, is nearly buried by years of erosion in the foothills above Pasadena. Conway W. Snyder, 77, right, worked on the secret Caltech project, in which rocket fuel was stored and tested in the canyons during World War II. Snyder, who became the fourth-ranking official on the project, oversaw the assembly of 100 aircraft rockets a day in Eaton Canyon for immediate shipment overseas. "We were so close to the [action], we could see the things we were inventing and making were being used against the enemy in a matter of days and weeks," he said.



# Secret in the Hills

By RENE TAWA  
TIMES STAFF WRITER

**F**or 50 years, the foothills above Pasadena had kept the wartime secret, their overgrown oaks hiding the concrete bunkers, their canyons giving no clues of the days when they rumbled from rocket test firings.

And then in October, 1993, the foothills bared all.

A wildfire swept through the hillsides above Eaton Canyon, exposing a long-forgotten piece of World War II history: five concrete storage bunkers that had been covered by thick chaparral, scrub oak and sycamore.

During the war, Caltech stored more than 500,000 pounds of rocket fuel in the bunkers as part of its secret Eaton Canyon Project, a round-the-clock operation with dozens of machine shops, storage rooms and administration buildings spread over 146 acres in the foothills.

Workers in Eaton Canyon loaded fuel into more than 1 million rockets before the war's end, testing them in the canyons. Unknown to the locals—who heard the curious boom of test firings—Caltech-designed rockets led shore assaults in Sicily, Guam and Iwo Jima, blew up German submarines and exploded Japanese aircraft.

The bunkers are the only buildings left in the foothills from the \$80-million project, which produced the first artillery rockets ever used by the U.S. military.

At the time, Pasadena was the rocket-making capital of the country, said Cal-

## Bunkers Hold History of WWII Caltech Rocket Fuel Project

tech archivist Judith Goodstein, with enough explosives in Eaton Canyon to blow the city off the map.

Even now, few people know about Caltech's war work, said Altadena resident Kenton Mac David, who worked on the project for two years as a technician.

Mac David, 72, is using his own time and money to write a "modest historical paper" on the project, for free distribution to local libraries and historical societies. He wants to interview not the scientists or administrators but the amateur laborers with whom he worked—the home-makers, barbers, preachers. The project's staff included dozens of Caltech's top scientists and more than 3,000 workers.

"A lot of this has been forgotten," said Mac David. "Now there's a generation of people who have never heard of the [project]. I just think it's part of history."

**T**he newly exposed bunkers are stirring curiosity about just what was going on in those hills during the war, when armed guards stood watch over the canyons. The revived interest comes during a year of 50th-anniversary commemorations of World War II milestones. On March 14, at Iwo Jima, veterans will commemorate the famous island battle against Japanese defenders. On Feb. 19, 1945, Marines, supported by Navy units, landed on Iwo

Jima under cover of 20,000 Caltech rockets.

Now, in unincorporated Kinneloa Estates, where the bunkers are exposed, neighbors whisper that the structures had something to do with a secret project during the war.

"I heard some neighbors talk that [Caltech] stored ammunition there during World War II," said resident Charles Brinton, 78, who recently heard of the Eaton Canyon Project for the first time.

No rocket fuel remains in or near the empty bunkers. Two of the structures are inaccessible, nearly buried by hillside erosion and chaparral growing on top. The three others are visible in the Kinneloa Estates area and other areas where the foothills above Eaton Canyon can be seen, such as Mac David's back yard.

The bunkers are a few hundred yards from a cul-de-sac, up a sandy trail, where bits of an asphalt road remain. The bunkers' 15-foot-high walls—reinforced concrete, a foot thick—are intact, the lightweight wood-and-tar-paper roofs long gone. The metal doors are no longer standing, although a couple remain on the ground, their hinges gone.

Inside the bunkers, tall grass grows atop mounds of dirt and sunshine throws

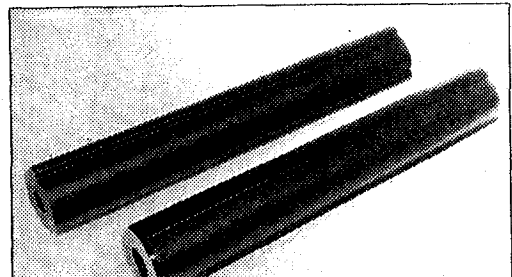
Please see BUNKERS, 14

## How Caltech Launched the U.S. Rocket Revolution

**C**altech's rocket weapons broke new ground in the field of artillery for U.S. forces.

The U.S. military had never used rockets before. U.S. forces preferred cannons, which were more accurate. Yet they wanted powerful projectiles that would have more impact and range.

The British had used artillery rockets in 1814, and the



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## BUNKERS

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shadows on graffiti-scarred walls. Also on the walls are spray-painted drawings of huge green daisies next to a peace sign—perhaps an unintentional commentary on the war effort that once took place there.

In one bunker, a faded orange couch with no legs sits next to a dirty sleeping bag. Homeless people saw the bunkers as a place to sleep after the wildfire, neighbors said. Mac David saw something else.

He remembers the first time he hiked into the foothills, a few days before the wildfire. He went up after a local fire captain told him the bunkers were still up there. At that time, he had only a notion that he wanted to write something about Caltech's contribution to the war effort. But once he saw the bunkers, he decided to focus on workers in the Eaton Canyon Project.

"When I saw what was left, I thought, 'This is fantastic, man! This is part of history,'" Mac David said.

Maybe not for long.

At one time, Caltech owned scores of storage bunkers and other support buildings throughout the foothills, but most were razed for residential development in Kinneloa Mesa and Kinneloa Estates, where houses started popping up in the 1960s. The remaining bunkers sit on land owned by Kinclair Partnership in Rowland Heights, said Bert Tibbet, the partnership's project coordinator. Environmental

impact reports, approved by the county in the early 1990s, determined that the bunkers have no historical significance and can be razed when the partnership begins work on its approved 20-home subdivision, he said. No groundbreaking date has been set.

There is no possibility that the area was contaminated by any leaking fuel or toxic waste, Tibbet said. The project's environmental reports included extensive soil and geology tests on the land.

"All those bunkers were treated like a laboratory—super clean," he said.

The bunkers' imminent demise lends a sense of urgency to Mac David's research.

"That makes it even more interesting to do something on them now, before they tear them down," said Mac David. "To me, it's historical, but things like that [eventually] have to go. Everything gives way to progress."

Mac David retired from the Jet Propulsion Laboratory as an engineering associate in 1986. He plans to write the paper by the end of the year. He is using the few resources available on the project, such as documents from Caltech's archives, and is trying to jar his own memory from his days in Eaton Canyon, from 1943 to 1945.

Meanwhile, the bunkers stand out in the naked hills, like lone sentries of a forgotten time. No local historical societies or libraries have any information about them, Mac David said.

"It's like these . . . years were lost," he lamented, shaking his head in frustration.

## On the Cover

Kenton Mac David stands under a door frame of a concrete bunker that was used by Caltech to store rocket fuel in Eaton Canyon during World War II. The October, 1993, wildfires exposed five bunkers that had been hidden from view and forgotten after the war.

In the Eaton Canyon foothills, all is quiet now, with only the occasional sound of hammering and sawing in the neighborhoods below, signs that life goes on after the wildfire.

But 50 years ago, the place was buzzing.

The project kicked off in September, 1941. Workers parked at a guard station on what is now Kinneloa Canyon Road. The project's boundaries were marked off by concrete barricades.

Three shifts worked 24 hours a day, making parts to ignite the rockets, running tests on rocket fuel and filling powder bags to ignite the propellant. Workers wore white fireproof coveralls and steel-toed shoes with brass-nailed soles to ward off any static sparks.

Kinneloa Estates resident Lee T. Carmichael, 78, was the foreman in charge of the project's mechanical equipment and crew from 1941 to 1946. He remembers pulling 36-hour shifts in the rush to make

Please see BUNKERS, 15

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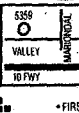
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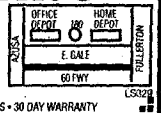
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# BUNKERS

Continued from 14

rocket parts, with much of his crew showing up at his house afterward for breakfast. At night, they worked under the glow of lanterns strung across posts.

There was "a sense of doing something for your country," he said. "Everyone felt they were doing a real job for a real cause."

But the project was classified, so employees couldn't even tell their spouses what they did or where they worked.

Mac David ran a firing station. He strapped down rockets on blocks and then fired them, checking pressure, temperature and other indicators. On some days, rockets boomed every 15 minutes, shooting flames into the air.

Meanwhile, scientists, engineers and other specialists worked furiously to develop new types of rockets, according to archivist Goodstein's book on the history of Caltech, "Millikan's School." (The book was named for physicist Robert Andrews Millikan, Caltech's first president.) Among the project leaders was Caltech's Nobel laureate William Fowler. On campus, the rocket project took over the optical shop, the astrophysics shop and other buildings.

Caltech subcontracted with 300 shops in the Los Angeles area to make rocket parts, such as nozzles and firing plugs. Eventually the parts were assembled in Eaton Canyon or local warehouses.

Holy Moses, an aircraft rocket, rolled off the production line in east Pasadena near what is now a Fedco store, Goodstein said in an interview. Besides the Holy Moses, Caltech designed and developed rocket-propelled anti-submarine bombs, her book says, as well as barrage rockets, which are fired for cover so landing crafts and troops can make their way to shore. Caltech's barrage rockets led off every shore landing by U.S. forces in the Pacific and Europe from 1944 to 1945.

Canyon Country resident Conway W. Snyder, 77, named and helped develop the Holy Moses rocket. At the time he was a graduate student in nuclear physics but worked his way up to become the fourth-ranking official on the project.

At one point, Snyder oversaw the assembly of 100 aircraft rockets a day in Eaton Canyon for

immediate shipment overseas.

"We were so close to the [action], we could see the things we were inventing and making were being used against the enemy in a matter of days and weeks," said Snyder, who retired from the Jet Propulsion Laboratory in 1984.

At the war's end, all operations in Eaton Canyon moved to the China Lake Naval Weapons Center near Death Valley. And then Cal-

tech folded up its war operations and returned to academics.

"They buried the past," archivist Goodstein said. "It was never talked about. . . . I don't think it had anything to do with shame or embarrassment. They did what they did and got back to what they really wanted to do—science—and they never looked back."

But the Eaton Canyon staff was proud of its work, Mac David said.

Mac David was in his early 20s when he started work on the project. He knows he doesn't have much time left to chronicle its history. He was able to find a few former workers after a Caltech publication last year mentioned that he was working on a history of the project and listed his phone number.

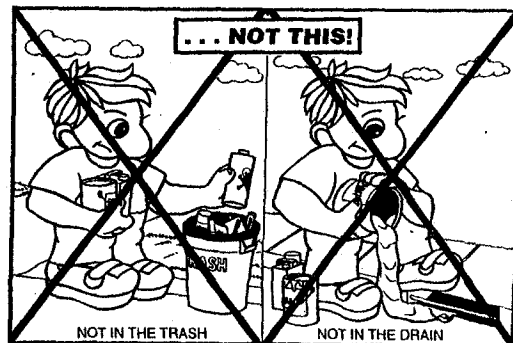
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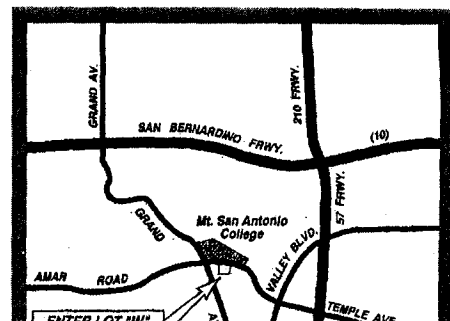
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